**DOCKET NO.: HITACHI-0015** **PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of: KAKIZAKI, et al.

Serial No.: 09/848,916 Group Art Unit: 2633

Filed: May 4, 2001 Examiner: NEGASH, Kinfe Michael

**For: A PROTECTION SWITCHING APPARATUS FOR 1+1 OPTICAL TRANSMISSION LINES**

**Certificate of Mailing**

I hereby certify that this paper is being sent via First Class Mail to the Commissioner for Patents, Alexandria, VA 22313-1450, on the date shown below.

On August 31, 2005

Iris C. Rousey

Iris C. Rousey

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

## PETITION TO REVIVE APPLICATION

The above-identified application has become abandoned as a result of Examiner's failure to timely respond to our response by the statutory deadline of July 24, 2005. Applicant hereby petitions for revival of this application. The grounds for this petition are as follows:

1. The response to the Final Office Action was due on April 24, 2005. The Response was filed with the United States Patent and Trademark Office (Office) on May 20, 2005 with a one-month extension of time. A copy of the Combined Amendment and Petition for Extension of Time Transmittal, the Amendment and Check No.: 11615 are attached hereto.

2. Counsel for applicant was not aware that the Examiner did not timely respond to our Response to Final Office Action until the Advisory Action dated August 16, 2005 was received on August 18, 2005. A copy of which is also attached hereto.

3. The undersigned, having firsthand knowledge of the facts, states that the entire delay in corresponding with the Office regarding the above referenced application, until the filing of a grantable petition pursuant to 37 C.F.R. §1.137(c) was unintentional.

4. Applicant desires and intends to keep the application in force.

5. This petition is timely filed under 37 C.F.R. §2.66.

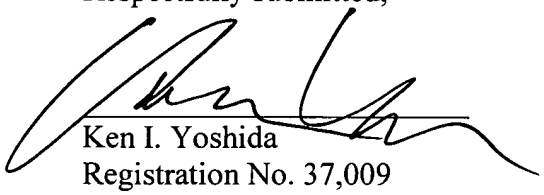
6. The correct fee for this petition is submitted herewith.

7. A Terminal disclaimer of the period of abandonment of the application is enclosed herewith along with the appropriate fee.

8. A Request for Continued Examination for the above application is enclosed herewith along with the appropriate fee.

Respectfully submitted,

Date: August 31, 2005



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**RECEIVED BY THE U.S. PATENT AND TRADEMARK OFFICE**

Combined Amendment and Petition for Extension of time Transmittal Letter; the Amendment; and a check in the amount of $120 for Extension of Time.

Applicant: KAKIZAKI, et al.
Serial No.: 09/848,916 Filed: 5/4/2001
Docket No. HITACHI-0015
Date Sent: May 20, 2005
KIY: ir

**RECEIVED BY THE U.S. PATENT AND TRADEMARK OFFICE**

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Date Sent: May 20, 2005
KIY: ir

KNOBLE & YOSHIDA, LLC
OPERATING ACCOUNT

11615

TE: May 20, 2005

E #: 11712

OUNT: $120.00

COUNT: 1

ID TO: United States Patent and Trademark Office

NATION: Filing Fee Payment (Extension of Time/HITACHI-0015)

IENT: Hitachi Ltd.

Hitachi-0015





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NUMBER 11712

3-5/310

*** One Hundred Twenty ***

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| DATE | AMOUNT |
|---|---|
| May 20, 2005 | $120.00 |

United States Patent and Trademark Office



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KNOBLE & YOSHIDA, LLC
OPERATING ACCOUNT

11615

DATE: May 20, 2005

CHE #: 11712

AMOUNT: $120.00

ACCOUNT 1

PAID TO: United States Patent and Trademark Office

CLIENT: Hitachi Ltd.

LAWYER: KIY

MATTER: Hitachi-0015

U.S. Patent Application Serial No. 09/848,916
Filed: 5/4/2001
Your Ref.: 340000482US1

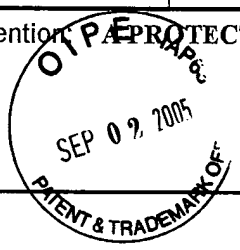
Filing Fee Payment (Extension of Time/HITACHI-0015)

| COMBINED AMENDMENT & PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) (Large Entity) | Docket No. HITACHI-0015 |
|---|---|

In Re Application Of: **KAKIZAKI, et al.**

| Application No. | Filing Date | Examiner | Customer No. | Group Art Unit | Confirmation No. |
|---|---|---|---|---|---|
| 09/848,916 | May 4, 2001 | NEGASH, Kinfe Michael | 21,302 | 2633 | 7119 |

Invention: **A PROTECTION SWITCHING APPARATUS FOR 1+1 OPTICAL TRANSMISSION LINES**




COMMISSIONER FOR PATENTS:

This is a combined amendment and petition under the provisions of 37 CFR 1.136(a) to extend the period for filing a response to the Office Action of **January 24, 2005** (*Date*) in the above-identified application.

The requested extension is as follows (check time period desired):

☒ One month ☐ Two months ☐ Three months ☐ Four months ☐ Five months

from: **April 24, 2005** (*Date*) until: **May 24, 2005** (*Date*)

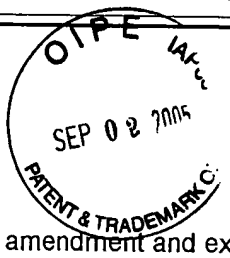
The fee for the amendment and extension of time has been calculated as shown below:

CLAIMS AS AMENDED

| | CLAIMS REMAINING AFTER AMENDMENT | | HIGHEST # PREV. PAID FOR | | NUMBER EXTRA CLAIMS PRESENT | RATE | ADDITIONAL FEE |
|---|---|---|---|---|---|---|---|
| OTAL CLAIMS | 35 | - | 36 | = | 0 | x $18.00 | $0.00 |
| NDEP. CLAIMS | 9 | - | 9 | = | 0 | x $86.00 | $0.00 |
| | | | | | | FEE FOR AMENDMENT | $0.00 |
| | | | | | | FEE FOR EXTENSION OF TIME | $120.00 |
| | | | | | | **TOTAL FEE FOR AMENDMENT AND EXTENSION OF TIME** | **$120.00** |

# COMBINED AMENDMENT & PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) (Large Entity)

Docket No.
**HITACHI-0015**




The fee for the amendment and extension of time is to be paid as follows:

☒ A check in the amount of **$120.00** for the amendment and extension of time is enclosed.

☐ Please charge Deposit Account No. in the amount of

☒ The Director is hereby authorized to charge payment of the following fees associated with this communication or credit any overpayment to Deposit Account No. **50-0462**

- ☒ Any additional filing fees required under 37 C.F.R. 1.16.
- ☐ Any patent application processing fees under 37 CFR 1.17.

☒ If an additional extension of time is required, please consider this a petition therefor and charge any additional fees which may be required to Deposit Account No.

☐ Payment by credit card. Form PTO-2038 is attached.

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

*Signature*

Dated: **May 20, 2005**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**15-599-0600**


I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to the "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)] on

5/20/05
*(Date)*

*Signature of Person Mailing Correspondence*

**Iris C. Rousey**

*Typed or Printed Name of Person Mailing Correspondence*

DOCKET NO.: HITAC[illegible]-0015 PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: KAKIZAKI, et al. Customer No.: 21,302

Serial No.: 09/848,916 Group Art Unit: 2633

Filed: May 4, 2001 Examiner: NEGASH, Kinfe Michael

For: **A PROTECTION SWITCHING APPARATUS FOR 1+1 OPTICAL TRANSMISSION LINES**



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On May 20, 2005

Iris C. Rousey

Iris C. Rousey

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

## AMENDMENT

Please enter the following changes in the above-referenced application in response to the Office Action mailed on January 24, 2005:

**Amendments to the Specification** begin on page 2 of this paper.

**Amendments to the Claims** are reflected in the listing of claims which begins on page 5 of this paper.

**Amendments to the Drawings** begin on page 17 of this paper and include both attached replacement sheets and an annotated sheet showing changes.

**Remarks/Conclusion** begins on page 18 of this paper.

An **Appendix** including amended drawing figures is attached following page 18 of this paper.

**Amendments to the Specification:**

Please replace the paragraph starting with "An optical coupler" beginning on page 22, lines 22-24 and ending on page 23, lines 1-19 with the following amended paragraph:

An optical coupler 110 splits its optical signal 1100 input into two output signals (in a 50:50 split, for example) to a first transmission line input unit 1120 and a second transmission line input unit 1130. In the first and second transmission line input devices 1120 and 1130, optical signal receivers 1122 and 1132 receive the two input signals from performance monitor ~~monitor and process~~ units 1124 and 1134 for monitoring performance of the optical signals and convert formats. Optical signal transmitters 1126 and 1136 perform wavelength conversion and output the resulting signals to the first and second transmission lines 120 and 130. In the first and second transmission line output units 1140 and 1150, optical signal receivers 1142 and 1152 receive the optical signals transmitted over the first and second transmission lines 120 and 130. ~~Optical Line~~ ~~P~~Performance ~~M~~monitor units 1144 and 1154 monitor performance or quality in the optical signals and conversion of formats. Optical transmitters 1146 and 1156 perform E/O conversion and output optical signals. ~~Optical Line P~~Performance ~~Monitor~~ monitor units 1144 and 1154 monitor the performance in the received signals, and output the results of the monitoring as 'signal performance monitor data' 1160 and 1170 for example. Signal performance monitor data 1160 and 1170 is the same monitor data as the signal performance monitor data 205 of Fig. 1. The optical couplers 1200 and 1210 respectively extract small samples such as 5% of the output signals from the first and second transmission line output units 1140 and 1150. Optical detectors including first optical detection unit 1220 and second optical detection unit 1230 monitor the signal strength of the optical signals that have been outputted by the first and second transmission line output units 1140 and 1150. The optical sensors 1220 and 1230 output their sensing results as 'optical signal strength monitor data' 1240 and 1250.

Please replace the paragraph starting with "Fig. 15 " beginning on page 24, lines 16-24 and ending on page 25, lines 1-17 with the following amended paragraph:

Fig. 15 is a block diagram illustrating a basic 1 + 1 optical switching configuration in which switching is performed by blocking the optical output signal of a transmission line output unit. The configuration of Fig. 15 does not use the signal performance monitor data 1160 and 1170 of Fig. 14, in which the performance monitoring results are sent. Therefore, blocking devices 1148 and 1158 are located in the first and second transmission line output units 1140 and 1150 to block the optical output signals. Reception signal performance monitoring is performed for quality in ~~optical line~~ performance monitor units 1144 and 1154, and the performance monitoring results are sent to blocking devices 1148 and 1158. As for the method of transmitting these results, any appropriate method includes separate lines in the transmission line output units 1140 and 1150 and empty areas of the signal frame. Based on the transmitted monitor results, the blocking devices 1148 and 1158 block the optical output of the first transmission line 120 or second transmission line 130 when the performance of either line is degraded. Optical couplers 1200 and 1210 extract small samples such as 5% of the optical signals from the first and second transmission line output units 1140 and 1150. Optical sensors 1220 and 1230 monitor the optical signal strength of output optical signals from the first and second transmission line output units 1140 and 1150 and output 'optical signal strength monitor data' 1240 and 1250, which contain information on the monitored optical signal strength. When a transmission line is determined to be faulty as a result of performance or quality monitoring by ~~optical line~~ performance monitor units 1144 and 1154 as described above, the signal of that transmission line will be blocked by one of the blocking devices 1148 and 1158. This will result in either of the lines to be faulty or low optical signal strength based upon by the corresponding optical detector or first optical detection unit 1220 or second optical detection unit 1230. A controller 230 is generally located within the apparatus and performs system monitor and control functions based on optical signal strength monitor data 1240 and 1250. Other than the above, this configuration is the same as that of Fig. 14.

Please replace the paragraph starting with "An optical coupler " beginning on page 26, lines 4-22 with the following amended paragraph:

An optical coupler 110 splits its optical signal 1100 input into two signals in such a manner as a 50:50 split to a first transmission line input unit 1120 and a second transmission line input unit 1130. In the first and second transmission line input units 1120 and 1130, optical signal receivers 1122 and 1132 receive the two input signals; ~~optical line~~ performance monitor units 1124 and 1134 monitor performance of the optical signals and convert formats. Optical signal transmitters 1126 and 1136 perform wavelength conversion, and output the resulting signals to the first and second transmission lines 120 and 130. In the first and second transmission line output units 1140 and 1150, optical signal receivers 1142 and 1152 receive the optical signals transmitted over the first and second transmission lines 120 and 130; ~~optical line~~ performance monitor units 1144 and 1154 monitor performance of the optical signals and convert formats. Optical transmitters 1146 and 1156 perform signal wavelength conversion and output the optical signals. Monitor-and-process units 1144 and 1154 monitor performance of the received signals, and output the results as 'signal performance monitor data' 1160 and 1170. For example, signal performance monitor data 1160 and 1170 are the same as the signal performance monitor data 205 of Fig. 1. The optical combiner 1260 combines the optical signals output from the first and second transmission line output units 1140 and 1150 and outputs the optical reception signal 1110. For example, the combiner is made using an optical coupler.

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

Claim 1 (previously presented ). A method of monitoring optical signals in a plurality of optical lines for selecting one of the optical lines, comprising:

a) providing at least a first optical line and a second optical line;

b) initializing the first optical line and the second optical line respectively as an operational line and a protection line;

c) determining optical strength at least in the operational line;

d) determining performance in the operational line and the protection line;

e) designating the first optical line and the second optical line respectively as the protection line and the operational line based upon any combination of the optical strength and the performance of the first optical line and the second optical line; and

f) storing data on the optical strength and the performance.

Claim 2 (previously presented). The method of monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 1 wherein the performance is determined in both the first optical line and the second optical line.

Claim 3 (previously presented). The method of monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 1 wherein the optical strength is determined in both the first optical line and the second optical line.

Claim 4 (previously presented). The method of monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 1 wherein the performance is determined in the protection line before said designating step e).

Claim 5 (previously presented). The method of monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 1 wherein the optical strength is determined in the protection line before said designating step e).

Claim 6 (previously presented). The method of monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 1 wherein the performance is determined in the operational line after said designating step e).

Claim 7 (previously presented). The method of monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 1 wherein the optical strength is determined in the operational line after said designating step e).

Claim 8 (previously presented). The method of monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 1 wherein the performance is determined in the protection line after said designating step e).

Claim 9 (previously presented). The method of monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 8 further comprising:

g) designating back the first optical line and the second optical line respectively as the operational line and the protection line based upon the performance of the protection line.

Claim 10 (previously presented). The method of monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 1 wherein the optical strength is determined in the protection line after said switching.

Claim 11. The method of monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 10 further comprising:

h) designating back the first optical line and the second optical line respectively as the operational line and the protection line based upon the optical strength of the protection line.

Claim 12 (canceled).

Claim 13 (previously presented). The method of monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 1 further comprising:

i) repeating said determining steps c) through said designating step e) in response to a request; and

j) reporting the stored data.

Claim 14 (previously presented). The method of monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 1 wherein said designating is optical switching between the first optical line and the second optical line.

Claim 15 (previously presented). The method of monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 1 wherein said designating is optical blocking one of the first optical line and the second optical line.

Claim 16 (currently amended). A system for monitoring optical signals in a plurality of optical lines for selecting one of the optical lines, comprising:

at least a first optical line and a second optical line;

an optical line selector for selecting one of the first optical line and the second optical line;

a first control unit connected to said optical line selector for generating a selection signal indicative of selecting the first optical signal and the second optical signal, said

first control unit initializing the selection signal indicative of selecting the first optical line and the second optical line respectively as an operational line and a protection line;

an optical detector connected to at least the operational line for determining optical strength in the operational line; and

~~an optical line~~a performance monitor unit connected to at least the operational line for determining performance in the operational line, wherein said first control unit further connected to said optical detector and said optical line performance monitor unit for generating the selection signal indicative of the first optical line and the second optical line respectively as the protection line and the operational line based upon any combination of the optical strength and the performance of the first optical line and the second optical line.

Claim 17 (currently amended). The system for monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 16 wherein an independent one of said ~~optical line~~ performance monitor unit is connected to both the first optical line and the second optical line.

Claim 18 (previously presented). The system for monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 17 wherein an independent one of said optical detector is connected to both the first optical line and the second optical line.

Claim 19 (previously presented). The system for monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 18 further comprising a second control unit connected to said first control unit for initiating the generation of the selection signal.

Claim 20 (previously presented). The system for monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 19 wherein said

first control unit in response to said second control unit generates the selection signal indicative of the first optical line and the second optical line respectively as the protection line and the operational line and subsequently also generates the selection signal indicative of the first optical line and the second optical line respectively as the operational line and the protection line.

Claim 21 (previously presented). The system for monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 19 wherein said first control unit in response to said second control unit generates the selection signal indicative of the first optical line and the second optical line respectively as the protection line and the operational line.

Claim 22 (previously presented). The system for monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 18 further comprising a memory unit for storing data on the optical strength and the performance, said first control units reading the stored data from said memory unit to send the stored data to said second control unit.

Claim 23 (previously presented). The system for monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 16 wherein said optical line selector is an optical switch.

Claim 24 (previously presented). The system for monitoring optical signals in a plurality of optical lines for selecting one of the optical lines according to claim 16 wherein said optical line selector is an optical blocking device.

Claim 25 (currently amended). An optical line selector package for selecting one of a plurality of optical lines, comprising:

an optical line selector connected to the plurality of input optical lines at an input side as well as at least one output optical line at an output side;

~~an optical line~~a performance monitor unit connected to the output optical line for monitoring a predetermined set of performance characteristics in the optical lines at the output side of said optical line selector, said optical line performance monitor generating a performance signal indicative of the performance characteristics;

a selector control unit connected to said ~~optical line~~ performance monitor unit to generate a selector drive signal at least based upon the performance signal, the selector drive signal being indicative of a current selection of the input optical lines; and

wherein said optical line selector further connected to said selector control unit for selecting one of the input optical lines based upon the selector drive signal.

Claim 26 (original). The optical line selector package for selecting one of a plurality of optical lines according to claim 25 further comprising:

an optical detector connected to one of the optical lines for detecting optical strength of the optical lines, said optical detector generating an optical strength signal indicative of the optical strength, wherein said selector control unit further connected to said optical detector for generating the selector drive signal based upon both the performance signal and the optical strength signal.

Claim 27 (original). The optical line selector package for selecting one of a plurality of optical lines according to claim 25 further comprising:

a monitor port connected to at least one of the input lines for monitoring the input lines.

Claim 28 (original). The optical line selector package for selecting one of a plurality of optical lines according to claim 25 further comprising:

a monitor port connected to at least one of the output lines for monitoring the output lines.

Claim 29 (original). The optical line selector package for selecting one of a plurality of optical lines according to claim 25 further comprising:

a LED unit connected to said selector control unit for indicating the current selection of the input optical lines.

Claim 30 (previously presented). An optical 1 + 1 switching apparatus, comprising:

a first transmission line output unit connected to a first transmission line for converting a first optical signal on the first transmission line to a first electrical signal and for monitoring first quality in the first transmission line based upon the first electrical signal, said first transmission line output unit converting the first electrical signal back to the first optical signal and outputting the first optical signal;

a second transmission line output unit connected to a second transmission line for converting a second optical signal on the second transmission line to a second electrical signal and for monitoring second quality in the second transmission line based upon the second electrical signal, said second transmission line output unit converting the second electrical signal back to the second optical signal and outputting the second optical signal;

a first optical detection unit connected to the first transmission line for monitoring first strength of the first optical signal;

a second optical detection unit connected to the second transmission line for monitoring second strength of the second optical signal;

an optical switch connected to the first transmission line and the second transmission line for selecting the first optical signal or the second optical signal; and

a control unit connected to said first transmission line output unit, said second transmission line output unit, said first optical detection unit, said second optical detection unit and said optical switch for controlling said optical switch by selecting the first transmission line or the second transmission line based upon the first quality, the second quality, the first strength and the second strength.

Claim 31 (previously presented). An optical 1 + 1 switching apparatus, comprising:

a first transmission line output unit connected to a first transmission line for converting a first optical signal on the first transmission line to a first electrical signal and for determining whether or not the first transmission line is faulty based upon the first electrical signal, in case of being faulty, said first transmission line output unit blocking the first optical signal, in case of being not faulty, said first transmission line output unit converting the first electrical signal back to the first optical signal and outputting the first optical signal;

a second transmission line output unit connected to a second transmission line for converting a second optical signal on the second transmission line to a second electrical signal and for determining whether or not the second transmission line is faulty based upon the second electrical signal, in case of being faulty, said second transmission line output unit blocking the second optical signal, in case of being not faulty, said second transmission line output unit converting the second electrical signal back to the second optical signal and outputting the second optical signal;

a first optical detection unit connected to said first transmission line output unit for monitoring first strength of the first optical signal;

a second optical detection unit connected to said second transmission line output unit for monitoring second strength of the second optical signal;

an optical switch connected to the first transmission line and the second transmission line for selecting the first optical signal or the second optical signal; and

a control unit connected to said first optical detection unit, said second optical detection unit and said optical switch for controlling said optical switch by selecting the first transmission line or the second transmission line based upon the first strength and the second strength.

Claim 32 (previously presented). An optical 1 + 1 switching apparatus, comprising:

a first transmission line output unit connected to a first transmission line for converting a first optical signal on the first transmission line to a first electrical signal and

monitoring first quality based upon the first electrical signal, said first transmission line output unit selecting to block the first optical signal or to convert the first electrical signal back to the first optical signal for outputting the first optical signal;

a second transmission line output unit connected to a second transmission line for converting a second optical signal on the second transmission line to a second electrical signal and monitoring quality based upon the second electrical signal, said second transmission line output unit selecting to block the second optical signal or to convert the second electrical signal back to the second optical signal for outputting the second optical signal;

an optical combiner connected to said first transmission line output unit and said second transmission line output unit for combining the first optical signal and the second optical signal to generate a combined optical signal and outputting the combined optical signal; and

a control unit connected to said first transmission line output unit and said second transmission line output unit for sending said first transmission line output unit a first signal indicative of blocking the first optical signal in case of detecting a faulty condition in the first transmission line based upon the first quality and for sending said second transmission line output unit a second signal indicative of blocking the second optical signal in case of detecting a faulty condition in the second transmission line based upon the second quality.

Claim 33 (previously presented). An optical 1 + 1 switching apparatus, comprising:

a first optical detection unit connected to a first transmission line for monitoring first strength of the first optical signal;

a second optical detection unit connected to a second transmission line for monitoring second strength of the second optical signal;

an optical switch connected to the first transmission line and the second transmission line for selecting the first optical signal or the second optical signal as a selected optical signal based upon a control signal;

a reception signal performance monitoring unit connected to said optical switch for monitoring quality of the selected optical signal; and

a control unit connected to said first optical detection unit, said second optical detection unit and said reception signal performance monitoring unit for generating the control signal based upon the first strength, the second strength and the quality.

Claim 34 (previously presented). The optical 1 + 1 switching apparatus according to claim 33 wherein said control unit further comprises a memory unit for storing the first strength, the second strength and the quality.

Claim 35 (previously presented). An optical 1 + 1 switching apparatus, comprising:

a first optical detection unit connected to a first transmission line for monitoring first strength of the first optical signal;

a second optical detection unit connected to a second transmission line for monitoring second strength of the second optical signal;

an optical switch connected to the first transmission line and the second transmission line for selecting the first optical signal or the second optical signal as a selected optical signal based upon a control signal;

a reception signal performance monitoring unit connected to said optical switch for monitoring quality of the selected optical signal; and

a control unit connected to said first optical detection unit, said second optical detection unit and said reception signal performance monitoring unit for generating the control signal based upon the first strength, the second strength and the quality, said control unit transmitting to said optical switch the control signal indicative of switching, said optical switch switching from the first transmission line to the second transmission line, said reception signal performance monitoring unit transmitting to said control unit the quality of the second transmission line, said control unit transmitting to said optical switch a switch back control signal indicative of switching back from the second transmission line to the first transmission line in response to the quality from said

reception signal performance monitoring unit, said optical switch switching from the second transmission line to the first transmission line as an operational line, wherein said optical 1 + 1 switching apparatus monitors the quality in the second transmission line as a protection circuit for a predetermined amount of time prior to switching to the second transmission line as a working circuit.

Claim 36 (previously presented). An optical 1 + 1 switching apparatus, comprising:

a first optical detection unit connected to a first transmission line for monitoring first strength of the first optical signal;

a second optical detection unit connected to a second transmission line for monitoring second strength of the second optical signal;

an optical switch connected to the first transmission line and the second transmission line for selecting the first optical signal or the second optical signal as a selected optical signal based upon a control signal;

a reception signal performance monitoring unit connected to said optical switch for monitoring quality of the selected optical signal; and

a control unit connected to said first optical detection unit, said second optical detection unit and said reception signal performance monitoring unit for generating the control signal based upon the first strength, the second strength and the quality, said reception signal performance monitoring unit or said first optical detection unit transmitting to said control unit an alarm signal in case of a faulty condition in the first transmission line, said control unit transmitting to said optical switch the control signal in response to the alarm signal, said optical switch switching from the first transmission line to the second transmission line in response to the control signal for maintaining transmission of the selected optical signal, wherein said control unit transmits to said optical switch the control signal indicative of switching after a predetermined amount of time, said optical switch switching from the second transmission line to the first transmission line, said reception signal performance monitoring unit transmitting to said control unit the quality of the first transmission line, said control unit transmitting to said

optical switch a switch back control signal indicative of switching back from the first transmission line to the second transmission line in response to the quality from said reception signal performance monitoring unit, said optical switch switching from the first transmission line to the second transmission line as an operational line, wherein said optical 1 + 1 switching apparatus monitors the quality in the first transmission line as a protection circuit for a predetermined amount of time prior to switching to the first transmission line as a working circuit.

**Amendments to the Drawings:**

The attached sheets of drawings includes changes to Figs. 14-16. These sheets, which includes Figs. 14-16, replaces the original sheets including Figs. 14-16.

In Figs. 14-16, please change elements 1120, 1134, 1144 and 1154 to read "Performance Monitor Unit."

Attachment: Replacement Sheets
Annotated Sheets Showing Changes

## REMARKS

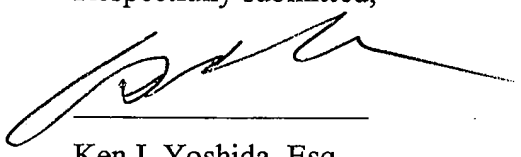
In FIGURES 14, 15 and 16, reference numerals 1124, 1134, 1144, and 1154 are now labeled as "Performance Monitor Unit." Similarly, in claims 16, 17 and 25, "optical line performance monitor unit" has been amended to "performance monitor unit." Lastly, the corresponding portions of the specification with respect to Figs. 14, 15 and 16 have been amended to refer the numerals 1124, 1134, 1144 and 1154 as "performance monitor unit."

Accordingly, the drawing objections and the rejections of claims 16 through 29 should be withdrawn.

## Conclusion

In view of the above remarks and attachments, the Applicants respectfully submits that all of the pending claims are in condition for allowance and respectfully request a favorable Office Action so indicating.

Respectfully submitted,



Ken I. Yoshida, Esq.
Reg. No. 37,009

Date: May 20, 2005

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Eight Penn Center, Suite 1350
1628 John F. Kennedy Blvd.
Philadelphia, PA 19103
(215) 599-0600

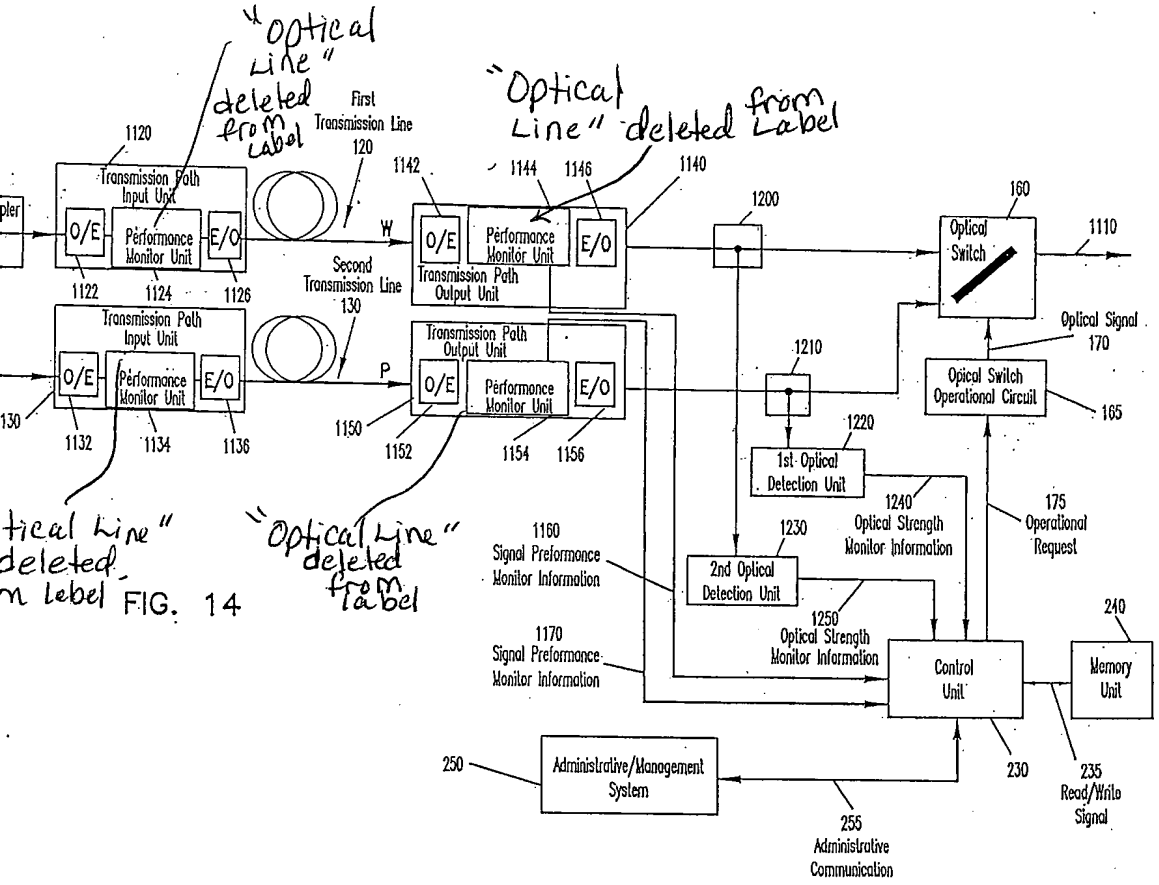



FIG. 14

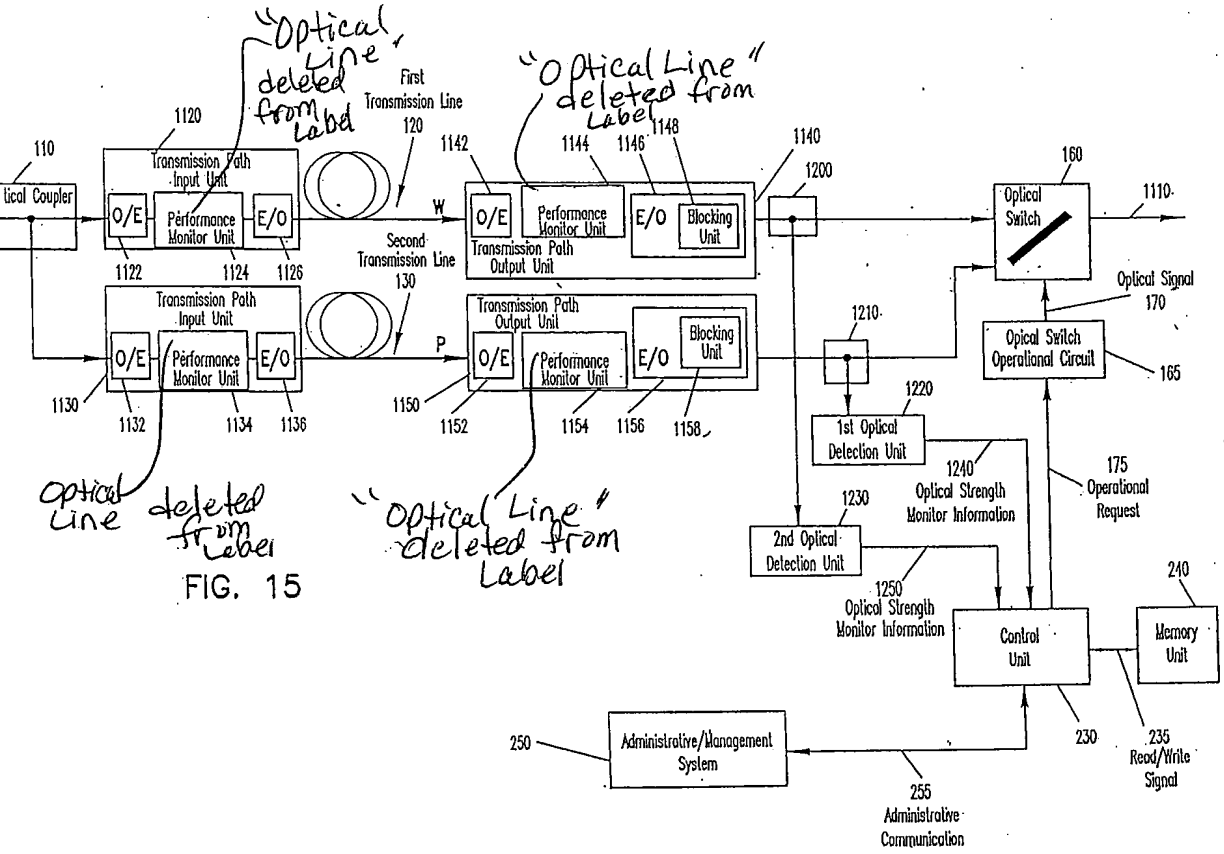

"Optical Line" deleted from Label
First Transmission Line
"Optical Line" deleted from Label
110
lical Coupler
1120
Transmission Path Input Unit
O/E
Performance Monitor Unit
E/O
1122
1124
1126
W
120
1142
1144
1146
1148
1140
1200
160
Optical Switch
1110
Second Transmission Line
130
Transmission Path Output Unit
Blocking Unit
Optical Signal
170
1210
Optical Switch Operational Circuit
165
P
1130
1132
1134
1136
1150
1152
1154
1156
1158
1220
1st Optical Detection Unit
1240
Optical Strength Monitor Information
175
Operational Request
1230
2nd Optical Detection Unit
1250
Optical Strength Monitor Information
240
Control Unit
Memory Unit
230
235
Read/Write Signal
250
Administrative/Management System
255
Administrative Communication
optical Line deleted from Label
"Optical Line" deleted from Label

FIG. 15

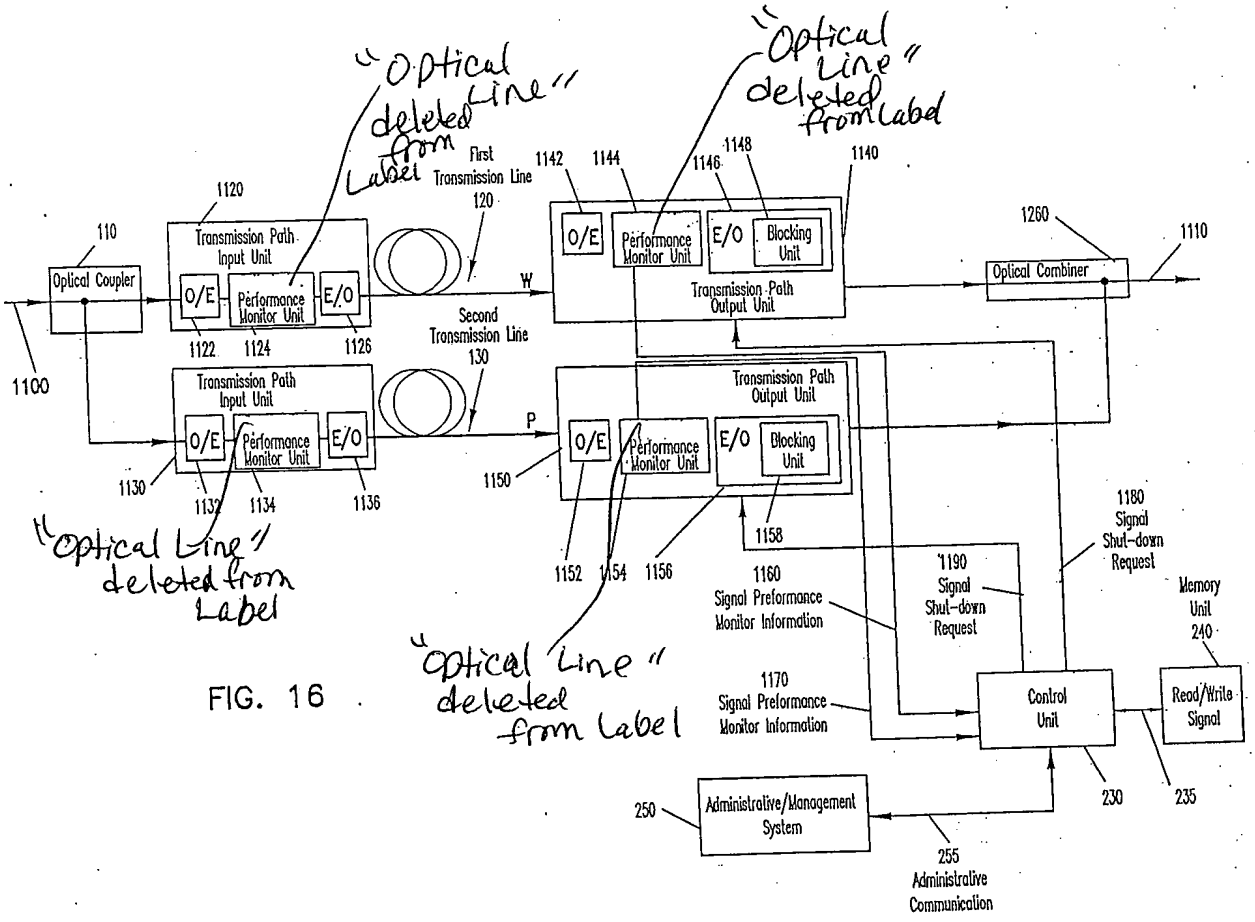

"Optical Line" deleted from Label
"Optical Line" deleted from Label
"Optical Line" deleted from Label
"Optical Line" deleted from Label
1100
110
Optical Coupler
1120
Transmission Path Input Unit
O/E
Performance Monitor Unit
E/O
1122
1124
1126
First Transmission Line
120
W
Second Transmission Line
130
P
1130
1132
1134
1136
1140
1142
1144
1146
1148
Transmission Path Output Unit
Blocking Unit
1150
1152
1154
1156
1158
1160
Signal Preformance Monitor Information
1170
Signal Preformance Monitor Information
1180
Signal Shut-down Request
1190
Signal Shut-down Request
1260
Optical Combiner
1110
Memory Unit
240
Control Unit
Read/Write Signal
230
235
250
Administrative/Management System
255
Administrative Communication

FIG. 16

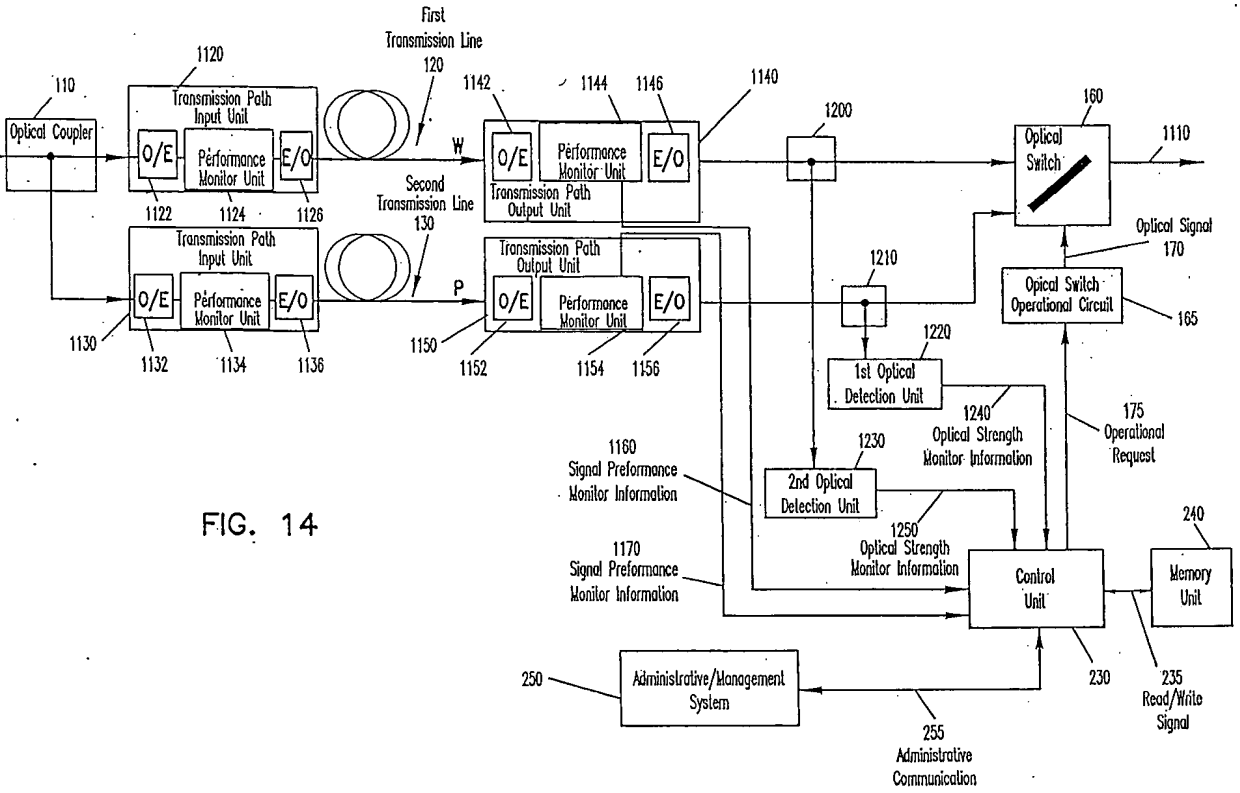

First Transmission Line
120
1120
110
Optical Coupler
Transmission Path Input Unit
O/E
Performance Monitor Unit
E/O
1122
1124
1126
W
Second Transmission Line
130
P
1142
1144
1146
1140
Transmission Path Output Unit
1200
160
Optical Switch
1110
Optical Signal
170
Optical Switch Operational Circuit
165
1210
1220
1st Optical Detection Unit
1240
Optical Strength Monitor Information
175
Operational Request
1130
1132
1134
1136
1150
1152
1154
1156
1160
Signal Preformance Monitor Information
1230
2nd Optical Detection Unit
1250
Optical Strength Monitor Information
1170
Signal Preformance Monitor Information
Control Unit
240
Memory Unit
230
235
Read/Write Signal
250
Administrative/Management System
255
Administrative Communication

FIG. 14

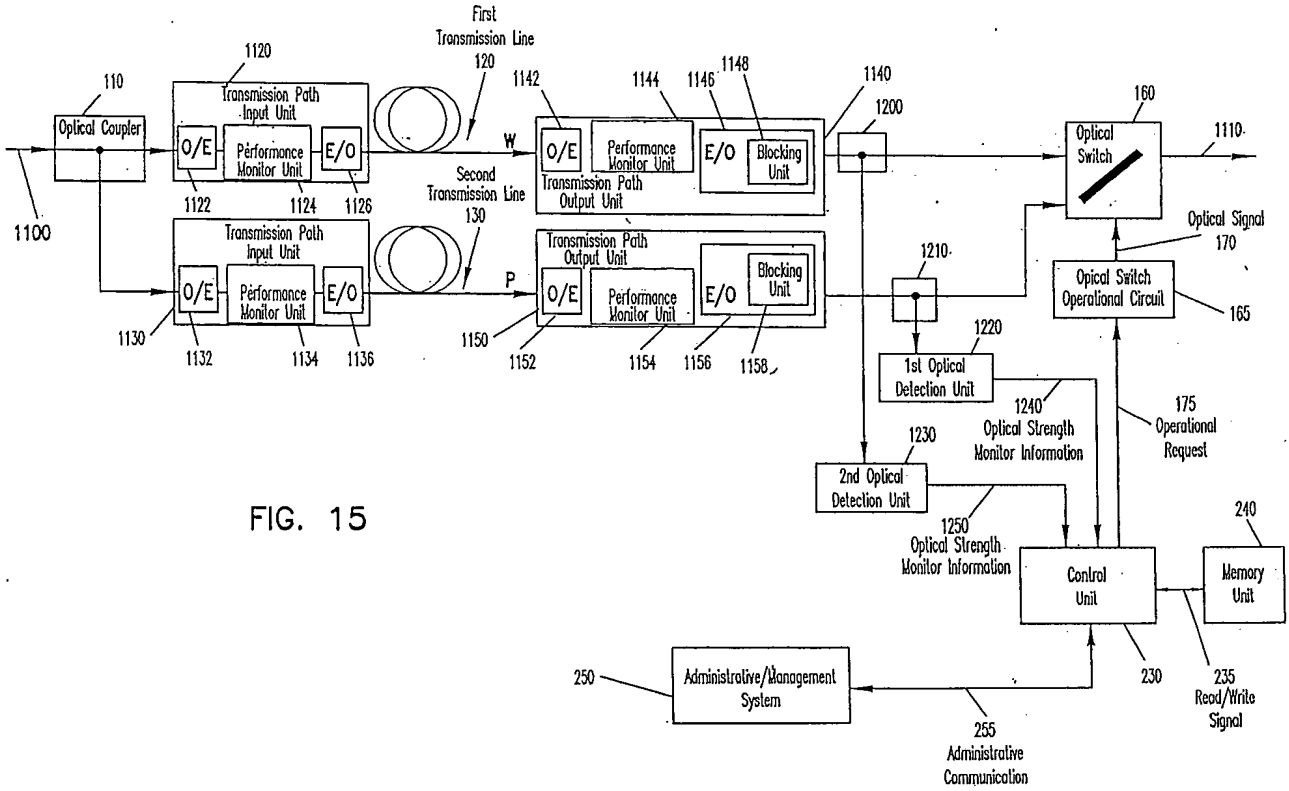
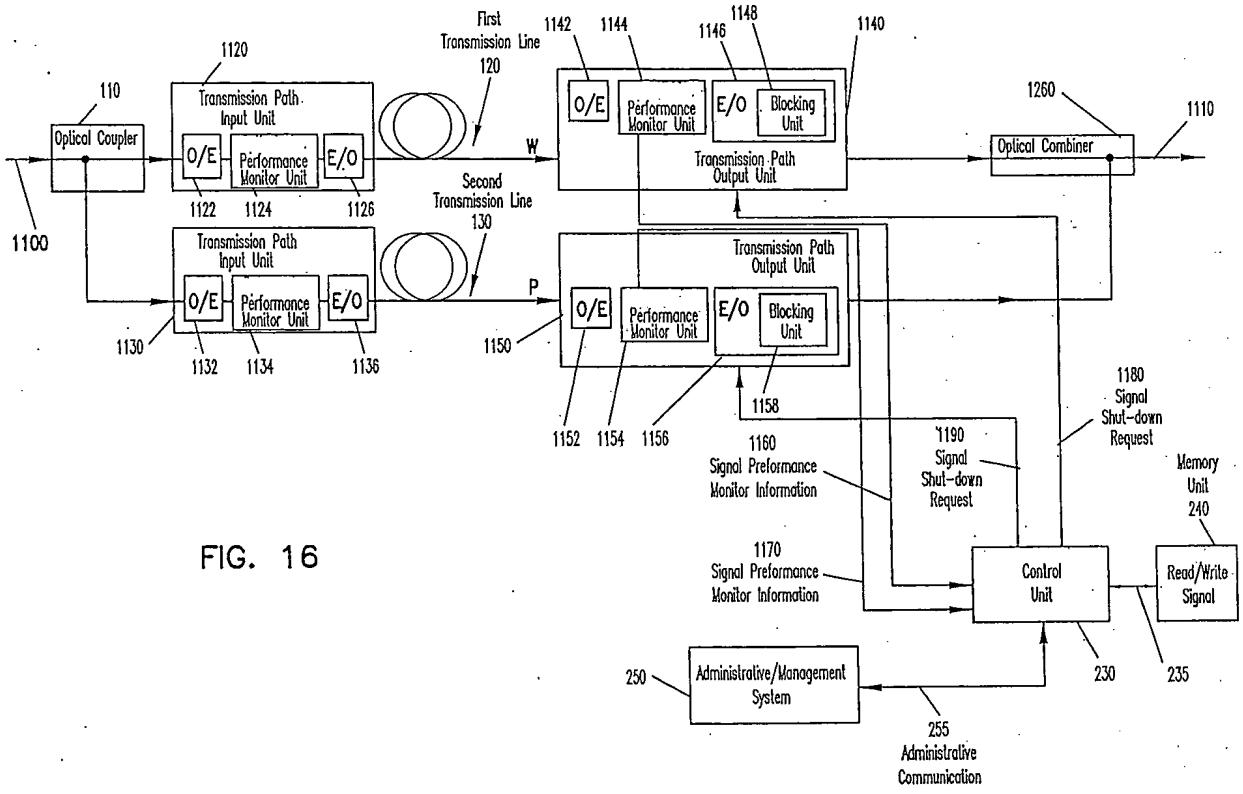

1100
110
Optical Coupler
1120
Transmission Path Input Unit
O/E
Performance Monitor Unit
E/O
1122
1124
1126
First Transmission Line
120
W
Second Transmission Line
130
P
1130
1132
1134
1136
1142
1144
1146
1148
1140
1200
Transmission Path Output Unit
Blocking Unit
1150
1152
1154
1156
1158
160
Optical Switch
1110
Optical Signal
170
Optical Switch Operational Circuit
165
1210
1220
1st Optical Detection Unit
1240
Optical Strength Monitor Information
175
Operational Request
1230
2nd Optical Detection Unit
1250
Optical Strength Monitor Information
240
Control Unit
Memory Unit
230
235
Read/Write Signal
250
Administrative/Management System
255
Administrative Communication

FIG. 15


1100
110
Optical Coupler
1120
Transmission Path Input Unit
O/E
Performance Monitor Unit
E/O
1122
1124
1126
First Transmission Line
120
W
Second Transmission Line
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1130
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Transmission Path Output Unit
Blocking Unit
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1260
Optical Combiner
1110
1160
Signal Preformance Monitor Information
1170
Signal Preformance Monitor Information
1180
Signal Shut-down Request
1190
Signal Shut-down Request
Memory Unit
240
Control Unit
Read/Write Signal
230
235
250
Administrative/Management System
255
Administrative Communication

FIG. 16